

PERAC AUDIT REPORT



Worcester Contributory Retirement System



JAN. 1, 2012 - DEC. 31, 2014



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PERAC

COMMONWEALTH OF MASSACHUSETTS | PUBLIC EMPLOYEE RETIREMENT ADMINISTRATION COMMISSION

PHILIP Y. BROWN, ESQ., *Chairman*

JOSEPH E. CONNARTON, *Executive Director*

Auditor SUZANNE M. BUMP | KATHLEEN M. FALLON | KATE FITZPATRICK | JAMES M. MACHADO | ROBERT B. MCCARTHY | JENNIFER F. SULLIVAN

April 12, 2017

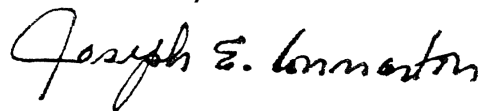
The Public Employee Retirement Administration Commission has completed an examination of the Worcester Retirement System pursuant to G.L. c. 32, § 21. The examination covered the period from January 1, 2012 to December 31, 2014. This audit was conducted in accordance with the accounting and management standards established by the Public Employee Retirement Administration Commission, in regulation 840 CMR 25.00. Additionally, all supplementary regulations approved by PERAC and on file at PERAC are listed in this report.

In our opinion, the financial records are being maintained and the management functions are being performed in conformity with the standards established by the Public Employee Retirement Administration Commission.

We commend the Worcester Retirement Board for the exemplary operation of the system.

In closing, I acknowledge the work of examiners Scott Henderson and Michael Pasternak who conducted this examination, and express appreciation to the Board of Retirement and staff for their courtesy and cooperation.

Sincerely,



Joseph E. Connarton
Executive Director



STATEMENT OF LEDGER ASSETS AND LIABILITIES

AS OF DECEMBER 31,			
	2014	2013	2012
Net Assets Available For Benefits:			
Cash	\$7,427,592	\$3,248,260	\$3,825,931
Fixed Income Securities	114,205,223	99,935,845	118,731,173
Equities	17,433,146	17,504,617	17,543,695
Pooled Domestic Equity Funds	186,915,169	196,657,594	150,580,931
Pooled International Equity Funds	204,308,381	204,810,703	172,232,863
Pooled Domestic Fixed Income Funds	41,977,225	40,766,997	28,877,214
Pooled Alternative Investment Funds	115,511,172	117,364,452	122,856,794
Pooled Real Estate Funds	119,879,835	106,652,773	93,087,796
Hedge Funds	10,683,582	10,536,052	22,624,173
Interest Due and Accrued	569,758	542,906	954,781
Accounts Receivable	10,246,214	11,558,457	855,734
Accounts Payable	(3,524,122)	(2,588,373)	(2,703,749)
Total	<u>\$825,633,173</u>	<u>\$806,990,282</u>	<u>\$729,467,335</u>
Fund Balances:			
Annuity Savings Fund	\$183,475,605	\$178,648,060	\$172,550,795
Annuity Reserve Fund	57,153,305	55,629,344	55,270,478
Pension Fund	7,756,460	6,646,547	5,931,523
Military Service Fund	198,332	201,800	15,767
Expense Fund	0	0	0
Pension Reserve Fund	577,049,471	565,864,530	495,698,772
Total	<u>\$825,633,173</u>	<u>\$806,990,282</u>	<u>\$729,467,335</u>

STATEMENT OF CHANGES IN FUND BALANCES

	Annuity Savings Fund	Annuity Reserve Fund	Pension Fund	Military Service Fund	Expense Fund	Pension Reserve Fund	Total All Funds
Beginning Balance (2012)	\$165,906,349	\$55,577,828	\$27,824,133	\$15,751	\$0	\$406,677,705	\$656,001,767
Receipts	15,442,271	1,628,730	37,551,479	16	4,953,824	88,908,857	148,485,177
Interfund Transfers	(7,230,454)	7,139,316	(21,071)	0	0	112,210	(0)
Disbursements	(1,567,371)	(9,075,396)	(59,423,018)	0	(4,953,824)	0	(75,019,608)
Ending Balance (2012)	172,550,795	55,270,478	5,931,523	15,767	0	495,698,772	729,467,335
Receipts	16,207,982	1,623,156	40,662,105	186,033	4,960,416	91,139,851	154,779,543
Interfund Transfers	(8,211,977)	8,106,676	21,079,394	0	0	(20,974,093)	0
Disbursements	(1,898,740)	(9,370,966)	(61,026,475)	0	(4,960,416)	0	(77,256,597)
Ending Balance (2013)	178,648,060	55,629,344	6,646,547	201,800	0	565,864,530	806,990,282
Receipts	16,500,573	1,653,421	43,075,253	202	5,813,516	32,500,877	99,543,841
Interfund Transfers	(9,945,905)	9,875,048	21,390,463	(3,670)	0	(21,315,936)	0
Disbursements	(1,727,122)	(10,004,508)	(63,355,803)	0	(5,813,516)	0	(80,900,949)
Ending Balance (2014)	\$183,475,605	\$57,153,305	\$7,756,460	\$198,332	\$0	\$577,049,471	\$825,633,173

STATEMENT OF RECEIPTS

FOR THE PERIOD ENDING DECEMBER 31,			
	2014	2013	2012
Annuity Savings Fund:			
Members Deductions	\$15,572,559	\$15,064,952	\$14,504,570
Transfers from Other Systems	600,902	706,570	601,727
Member Make Up Payments and Re-deposits	62,473	64,705	55,131
Member Payments from Rollovers	56,085	158,408	95,027
Investment Income Credited to Member Accounts	208,554	213,347	185,816
Sub Total	<u>16,500,573</u>	<u>16,207,982</u>	<u>15,442,271</u>
Annuity Reserve Fund:			
Investment Income Credited to the Annuity Reserve Fund	<u>1,653,421</u>	<u>1,623,156</u>	<u>1,628,730</u>
Pension Fund:			
3 (8) (c) Reimbursements from Other Systems Received from Commonwealth for COLA and Survivor Benefits	597,841	529,517	510,959
Pension Fund Appropriation	1,248,081	1,955,659	1,529,381
Settlement of Workers' Compensation Claims	41,200,578	38,148,683	35,409,140
Recovery of 91A Overearnings	18,000	10,000	102,000
	<u>10,753</u>	<u>18,246</u>	<u>0</u>
Sub Total	<u>43,075,253</u>	<u>40,662,105</u>	<u>37,551,479</u>
Military Service Fund:			
Contribution Received from Municipality on Account of Military Service	0	186,017	0
Investment Income Credited to the Military Service Fund	202	16	16
Sub Total	<u>202</u>	<u>186,033</u>	<u>16</u>
Expense Fund:			
Investment Income Credited to the Expense Fund	<u>5,813,516</u>	<u>4,960,416</u>	<u>4,953,824</u>
Pension Reserve Fund:			
Interest Not Refunded	45	4,427	1,161
Miscellaneous Income	1,986	191	511
Excess Investment Income	<u>32,498,846</u>	<u>91,135,234</u>	<u>88,907,186</u>
Sub Total	<u>32,500,877</u>	<u>91,139,851</u>	<u>88,908,857</u>
Total Receipts, Net	<u>\$99,543,841</u>	<u>\$154,779,543</u>	<u>\$148,485,177</u>

STATEMENT OF DISBURSEMENTS

FOR THE PERIOD ENDING DECEMBER 31,			
	2014	2013	2012
Annuity Savings Fund:			
Refunds to Members	\$949,794	\$1,089,039	\$1,031,391
Transfers to Other Systems	<u>777,328</u>	<u>809,701</u>	<u>535,981</u>
Sub Total	<u>1,727,122</u>	<u>1,898,740</u>	<u>1,567,371</u>
Annuity Reserve Fund:			
Annuities Paid	9,942,434	9,176,408	9,075,396
Option B Refunds	<u>62,074</u>	<u>194,558</u>	<u>0</u>
Sub Total	<u>10,004,508</u>	<u>9,370,966</u>	<u>9,075,396</u>
Pension Fund:			
Pensions Paid:			
Regular Pension Payments	33,659,810	30,940,562	29,865,176
Survivorship Payments	1,326,138	2,357,117	2,219,417
Ordinary Disability Payments	529,901	532,847	517,857
Accidental Disability Payments	11,066,163	10,949,147	10,960,801
Accidental Death Payments	3,563,733	3,623,849	3,529,393
Section 101 Benefits	114,527	99,945	98,180
3 (8) (c) Reimbursements to Other Systems	2,598,760	2,245,227	2,195,373
State Reimbursable COLA's Paid	<u>10,496,771</u>	<u>10,277,781</u>	<u>10,036,821</u>
Sub Total	<u>63,355,803</u>	<u>61,026,475</u>	<u>59,423,018</u>
Expense Fund:			
Board Member Stipend	22,500	22,500	20,625
Salaries	330,277	327,294	308,223
Legal Expenses	81,413	58,241	55,136
Medical Expenses	9,363	11,484	7,297
Travel Expenses	2,071	6,134	5,400
Administrative Expenses	14,914	13,547	7,220
Actuarial Services	30,000	29,000	28,000
Accounting Services	21,000	21,000	21,000
Education and Training	1,430	2,500	2,170
Furniture and Equipment	0	0	2,888
Management Fees	4,839,522	4,012,760	4,069,579
Custodial Fees	177,254	193,676	176,232
Consultant Fees	209,583	191,250	179,167
Service Contracts	28,867	27,883	27,799
Fiduciary Insurance	<u>45,321</u>	<u>43,146</u>	<u>43,088</u>
Sub Total	<u>5,813,516</u>	<u>4,960,416</u>	<u>4,953,824</u>
Total Disbursements	<u>\$80,900,949</u>	<u>\$77,256,597</u>	<u>\$75,019,608</u>

INVESTMENT INCOME

FOR THE PERIOD ENDING DECEMBER 31,			
	2014	2013	2012
Investment Income Received From:			
Cash	(\$357)	\$530	\$812
Fixed Income	2,954,256	3,970,659	4,279,349
Equities	272,909	331,559	620,082
Pooled or Mutual Funds	10,796,597	7,750,657	7,867,073
Commission Recapture	<u>1,989</u>	<u>6,744</u>	<u>3,876</u>
Total Investment Income	<u>14,025,394</u>	<u>12,060,149</u>	<u>12,771,191</u>
Plus:			
Realized Gains	15,094,210	13,910,687	16,024,181
Unrealized Gains	77,160,491	113,047,149	109,914,927
Interest Due and Accrued - Current Year	<u>569,758</u>	<u>542,906</u>	<u>954,781</u>
Sub Total	<u>92,824,459</u>	<u>127,500,742</u>	<u>126,893,888</u>
Less:			
Paid Accrued Interest on Fixed Income Securities	(663,044)	(173,862)	(302,986)
Realized Loss	(2,940,934)	(5,231,564)	(1,911,247)
Unrealized Loss	(62,528,431)	(35,268,516)	(40,770,609)
Interest Due and Accrued - Prior Year	<u>(542,906)</u>	<u>(954,781)</u>	<u>(1,004,668)</u>
Sub Total	<u>(66,675,315)</u>	<u>(41,628,723)</u>	<u>(43,989,509)</u>
Net Investment Income	<u>40,174,538</u>	<u>97,932,168</u>	<u>95,675,570</u>
Income Required:			
Annuity Savings Fund	208,554	213,347	185,816
Annuity Reserve Fund	1,653,421	1,623,156	1,628,730
Military Service Fund	202	16	16
Expense Fund	<u>5,813,516</u>	<u>4,960,416</u>	<u>4,953,824</u>
Total Income Required	<u>7,675,692</u>	<u>6,796,935</u>	<u>6,768,385</u>
Net Investment Income	<u>40,174,538</u>	<u>97,932,168</u>	<u>95,675,570</u>
Less: Total Income Required	<u>7,675,692</u>	<u>6,796,935</u>	<u>6,768,385</u>
Excess Income (Loss) To The Pension Reserve Fund	<u>\$32,498,846</u>	<u>\$91,135,234</u>	<u>\$88,907,186</u>

SCHEDULE OF ALLOCATION OF INVESTMENTS OWNED

(percentages by category)

AS OF DECEMBER 31, 2014		
	MARKET VALUE	PERCENTAGE OF TOTAL ASSETS
Cash	\$7,427,592	0.9%
Fixed Income Securities	114,205,223	14.0%
Equities	17,433,146	2.1%
Pooled Domestic Equity Funds	186,915,169	22.8%
Pooled International Equity Funds	204,308,381	25.0%
Pooled Domestic Fixed Income Funds	41,977,225	5.1%
Pooled Alternative Investment Funds	115,511,172	14.1%
Pooled Real Estate Funds	119,879,835	14.6%
Hedge Funds	<u>10,683,582</u>	<u>1.3%</u>
Grand Total	<u>\$818,341,324</u>	<u>100.0%</u>

For the year ending December 31, 2014, the rate of return for the investments of the Worcester Retirement System was 5.05%. For the five-year period ending December 31, 2014, the rate of return for the investments of the Worcester Retirement System averaged 8.99%. For the 30-year period ending December 31, 2014, since PERAC began evaluating the returns of the retirement systems, the rate of return on the investments of the Worcester Retirement System was 9.03%.

The composite rate of return for all retirement systems for the year ending December 31, 2014 was 7.81%. For the five-year period ending December 31, 2014, the composite rate of return for the investments of all retirement systems averaged 10.08%. For the 30-year period ending December 31, 2014, since PERAC began evaluating the returns of the retirement systems, the composite rate of return on the investments of all retirement systems averaged 9.43%.

SUPPLEMENTARY INVESTMENT REGULATIONS

The Worcester Retirement System submitted the following supplementary investment regulations, which were approved by the Public Employee Retirement Administration Commission on:

December 27, 2011

With respect to the Worcester Retirement Board (“the Board”) investment in the Capital International Private Equity Fund VI, LP (“Fund”), the following shall apply:

In accordance with such investment, the Board is granted an exemption from the provisions of 840 CMR 17.03(2)(e) regarding parties in interest, as the Fund has indicated that any such engagement may, but is unlikely, to occur. Notwithstanding the provisions of this paragraph, the Fund shall be deemed in compliance with this regulation provided that if a transaction with a party in interest comes to the attention of the Fund, the Fund notifies the Board and PERAC.

The Board is granted an exemption from the provisions of 840 CMR 16.02(5) with respect to indemnification obligations, as contemplated in the Subscription and Partnership Agreements. In the event that the provisions related to indemnification obligations of the Subscription and Partnership Agreements conflict with the provisions of this regulation related to indemnification, the provisions of the Subscription and Partnership Agreements shall control. The Board determines hereby that the risk of undertaking the potential liability as set forth in the Subscription and Partnership Agreements does not outweigh the potential benefit of investing in the Fund.

The Board is granted an exemption from 840 CMR 19.01(7)(a)(6) with respect to fees based on committed capital, as the Partnership Agreement contemplates that such fees will, after a certain period, be based on a percentage per annum of capital contributions rather than committed capital. Notwithstanding the limits established herein fees may be based upon committed capital until the earlier to occur of (i) the last day of the Investment Period, as defined in the Partnership Agreement, and (ii) the date a successor fund (as defined in the Partnership Agreement, an unrelated investment fund having investment objectives and strategies substantially similar to the investment objectives of the Fund) begins to pay management fees.

The following provisions of 840 CMR 21.01 are amended as follows:

- i. 840 CMR 21.01(1) is amended by adding at the end of such provision: Notwithstanding the provisions of this regulation, the Fund may make purchases of securities by partial payment of their cost in connection with levered purchases and deferred payment structures as part of its investment strategy;
- ii. 840 CMR 21.01(2) amended by adding at the end of such provision: Notwithstanding the provisions of this regulation, although the Fund does not intend to engage in short sales as conventionally understood, the Fund is not prohibited from doing so under the Partnership Agreement and cannot be precluded from making investments using a structure that could resemble a short sale, for example, in cases where direct legal ownership of an investment in non-public securities by the Fund may be limited for regulatory or similar reasons;
- iii. 840 CMR 21.01(3),(4) and (5) are amended by adding at the end of each provision: Notwithstanding the provisions of this regulation, the Fund may use derivatives and engage in hedging activities for non – speculative purposes in connection with its investments;

SUPPLEMENTARY INVESTMENT REGULATIONS (Continued)

- iv. 840 CMR 21.01(6) is amended by adding at the end of such provision: Notwithstanding the provisions of this regulation, the Fund may make investments in non-public securities;
- v. 840 CMR 21.01(7) is amended by adding at the end of such provision: Notwithstanding the provisions of this regulation, although the Fund does not intend to make direct investments in mortgages, the Fund is not prohibited from doing so under the Partnership Agreement and cannot be precluded from making such investments;
- vi. 840 CMR 21.01(8) is amended by adding at the end of such provision: Notwithstanding the provisions of this regulation, the Fund may make collateral loans in connection with levered purchases;
- vii. 840 CMR 21.01(9) is amended by adding at the end of such provision: Notwithstanding the provisions of this regulation, the Fund may make loans to employees of, or individuals affiliated with, its portfolio companies in connection with its investments; and
- viii. 840 CMR 21.01(10) is amended at the end of such provision: Notwithstanding the provisions of this regulation, although the Fund is generally prohibited from making direct purchases or leases of real estate, such investments could be made with the consent of the Fund's advisory committee and the Fund cannot be precluded from making such investments.

The Fund's objective is to acquire, hold and dispose of securities, mainly through privately negotiated equity and equity - related investments operating primarily in global emerging markets outside of the U.S., in order to seek long term appreciation. The Board is satisfied with respect to representations made by the Fund with respect to providing the Board with a carve out provision to avoid investments that would potentially violate provisions of M.G.L. c. 32, s. 23(2)(g)(ii)(iii).

March 14, 2011

Regulation Number 16.08: The Worcester Retirement Board is authorized to invest in the State Street Global Advisors Global Natural Resources Non-Lending Index Fund. Because of the passive nature of this mandate and the very limited number of possible providers of this particular type of index fund, the Board did not conduct a conventional search process. Instead, the Board's consultant identified and solicited proposals from possible providers of this index product. Based on the appropriateness of its product relative to the Board's needs as well as other factors such as fees and liquidity, the Board voted to select the SSGA Global Natural Resources Non-Lending Index Fund for this mandate. The Board's familiarity with SSGA as an existing manager was also considered.

December 1, 2010

Regulation Number 16.08: In accordance with Investment Guideline 99-3, the Worcester Retirement Board may invest in Newstone Capital Partners II. The Board has been a satisfied investor in Newstone Capital Partners I. The management team and strategy remain the same and the Board has submitted the required regulatory documents. Notwithstanding the provisions of the Public Employee Retirement Administration Commission's investment regulations, the Worcester Retirement Board may exercise its discretion to invest funds of the Worcester Retirement System (the "System") in Newstone Capital Partners II, L.P. (the "Fund"), as contemplated by 840 CMR 19.00 et. seq., and while the funds of the System are invested in Partnership Interests (as defined in the Fund's Amended and Restated Limited Partnership Agreement) of the Fund, for purposes of

SUPPLEMENTARY INVESTMENT REGULATIONS (Continued)

applying the rules set forth in 840 CMR 16.00 et. seq., 17.00 et. seq., and 19.00 et. seq., investments of the System shall not be deemed to include any of the underlying assets of the Fund, but shall only include the Partnership Interests of the Fund, and the Fund shall not be deemed to be an investment manager or fiduciary to the System; provided that the Fund's general partner shall use its reasonable best efforts at all times to conduct the affairs of the Fund such that the assets of the Fund would not constitute plan assets of any ERISA partner subject to Title I of ERISA Section 4975 of the Internal Revenue Code of 1986, as amended, pursuant to the United States Department of Labor at Section 2510.3-101 of Part 2510 of Chapter XXV, Title 29 of the Code of Federal Regulations.

June 25, 2010

Notwithstanding the provisions of any statute or regulations of the Public Employee Retirement Administration Commission to the contrary, including the provisions of 840 CMR 21.01(1)(4)(5) and (6), the Worcester Retirement Board is hereby granted an exemption from restrictions on investment and may invest a portion of the funds of the Worcester Retirement System in the fund known as White Deer Energy, L.P.(the "Fund"). The Fund is a private equity fund which will invest in middle-market energy companies. The Fund will target \$50 to \$100 million equity investments in companies active in oil and gas production, oil service and equipment manufacturing and in energy infrastructure, primarily in North America.

October 11, 2009

Regulation Number 16.08: The Worcester Retirement Board is authorized to invest in State Street Global Advisors' Russell 1000 Growth Non-Lending Index Fund. The Board did not conduct a traditional competitive search process in selecting this manager, but the Board's investment consultant did solicit proposals from several major providers of Russell 1000 Growth index funds and the Board made its selection based on objective consideration of the criteria contained in the responses. The benefits accruing to the Board from SSGA being an existing manager were also considered.

August 13, 2009

Regulation Number 16.08: In accordance with Investment Guideline 99-2, the Worcester Retirement Board is authorized to modify its international equity index mandate with State Street Global Advisors. As it transitions out of securities lending funds and seeks to maximize portfolio liquidity, the Board will be adding an investment in SSGA's Daily MSCI-EAFE Index Fund to its existing SSGA MSCI-EAFE Index funds which provide less liquidity.

SUPPLEMENTARY INVESTMENT REGULATIONS (Continued)

June 4, 2009

Regulation Number 16.08: In accordance with Investment Guideline 99-2, the Worcester Retirement Board is authorized to transfer assets from four State Street Global Advisors index funds that incorporate securities lending to four corresponding index funds that do not allow securities lending. These modifications will ensure that the Board has daily liquidity on the funds in question. The funds involved are the S&P 500 Index, Russell 1000 Value Index, S&P 400 Mid Cap Index, and MSCI-EAFE Index.

March 3, 2009

(1) Notwithstanding the provisions of the Public Employee Retirement Administration Commission regulations, the Worcester Retirement Board may invest funds of the Worcester Retirement System (“System”) in the fund known as Aslan Realty Partners IV, LLC (the “Fund”), and while the assets of the System are so invested, the assets of the System shall be deemed to include, for purposes of applying the rules set forth in 840 CMR 16.00 et seq., 17.00 et seq., and 840 CMR 21.01, the System’s interest in the Fund but not any of the underlying assets of the Fund; provided that, at all times, either (1) less than twenty-five percent (25%) of each class of equity interest in the Fund is held by “benefit plan investors” (within the meaning of the Employee Retirement Income Security Act of 1974, as amended (“ERISA”) and the regulations promulgated thereunder), or (2) the Fund qualifies as a “venture capital operating company” or “real estate operating company” within the meaning of ERISA and the regulations promulgated thereunder.

(2) The limitations and restrictions of 840 CMR Section 19.01(6) shall not apply to the Fund for the two-year period commencing on the date of the Fund’s initial investment.

February 9, 2009

Regulation Number 19.01(6): Notwithstanding the provisions of the Public Employee Retirement Administration Commission regulations, the Worcester Retirement Board may invest funds of the Worcester Retirement System (the “System”) in the fund known as AEW Partners VI, L.P. (the “Fund”), and while the assets of the System are so invested, the assets of the System shall be deemed to include, for purposes of applying the rules set forth in 840 CMR 16.00 et seq., 17.00 et seq.; and 840 CMR 21.01, the System’s interest in the Fund but not any of the underlying assets of the Fund; provided that, at all times, either (1) less than twenty-five percent (25%) of each class of equity interest in the Fund is held by “benefit plan investors” (within the meaning of the Employee Retirement Income Security Act of 1974, as amended (“ERISA”) and the regulations promulgated thereunder), or (2) the Fund qualifies as a “venture capital operating company” or “real estate operating company” within the meaning of ERISA and the regulations promulgated thereunder.

The Limitations and restrictions of 840 CMR Section 19.01(6) shall not apply to the Fund for the two-year period commencing on the date of the Fund’s initial investment.

SUPPLEMENTARY INVESTMENT REGULATIONS (Continued)

October 28, 2008

Regulation Number 16.08: In accordance with Investment Guideline 99-3, the Worcester Retirement Board may invest in the Riverside Capital Appreciation Fund V. The Board has been a satisfied investor in predecessor funds with Riverside Capital. Performance has been good and the strategy and investment team are essentially unchanged. The manager has submitted an updated exemption application

March 24, 2008

Regulation Number 16.08: In accordance with Investment Guideline 99-3, the Worcester Retirement Board is authorized to invest in Ascent Venture Partners V. The Board has been a satisfied investor in Ascent Venture Partners IV. The management team and strategy are unchanged and Ascent Venture Partners has submitted an updated Exemption Application.

February 25, 2008

Notwithstanding the provisions of any statute or regulations of the Public Employee Retirement Administration Commission to the contrary, including the provisions of 840 CMR 21.01(2)(3)(4) and (5), the Worcester Retirement Board is hereby granted an exemption from restrictions on investment and may invest eight million dollars (\$8,000,000) of the funds of the Worcester Retirement System (the "System") in the fund known as the Global Infrastructure Partners Fund I, a Guernsey limited partnership ("Fund"). The Fund will primarily seek to make control-oriented equity, equity-related and investments in debt securities in infrastructure and infrastructure-related assets including in businesses that own, operate, develop, manage or support infrastructure-related assets in energy, transportation and water sectors.

January 18, 2008

Regulation Number 16.08: In accordance with Investment Guideline 99-3, the Worcester Retirement Board may invest in Northstar Mezzanine Partners V. The Board has been a satisfied investor in Northstar's two preceding funds. The management team and investment strategy are unchanged. The manager has submitted an updated Exemption Application.

June 27, 2007

Regulation Number 21.01(2)(3)(4)(5): Notwithstanding the provisions of any statute or regulations of the Public Employee Retirement Administration Commission to the contrary, including the provisions of 840 CMR 21.01(2)(3)(4) and (5), the Worcester Retirement Board is hereby granted an exemption from restrictions on investment and may invest a portion of the funds of the Worcester Retirement System (the "System") in the fund known as the EB Daily Valued Global Alpha I Fund of Mellon Capital Management Corporation.

SUPPLEMENTARY INVESTMENT REGULATIONS (Continued)

June 27, 2007

Notwithstanding the provisions of the Public Employee Retirement Administration Commission regulations, the Worcester Retirement Board may invest funds of the Retirement System (the "System") in the fund known as the RREEF Global Real Estate Securities Fund (US\$ Hedged Strategy) LP (the "Fund"), and effective as of the date of the initial investment by the System of any of its assets in the Fund, while the assets of the System are so invested, the activities and investments of the Fund, directly or indirectly, shall be deemed to satisfy the prohibited transaction rules set forth in 840 CMR 16.00 et seq. and 840 CMR 17.03 to the extent such activities satisfy the prohibited transaction rules set forth in Section 406 of the U.S. Employee Retirement Income Security Act of 1974, as amended ("ERISA"), taking into account the statutory exemptions available under ERISA, and Prohibited Transaction Class Exemption 84-14, as amended, Prohibited Transaction Class Exemption 2003-24, and other available class exemptions.

May 22, 2007

Notwithstanding the provisions of the Public Employee Retirement Administration Commission's investment regulations, the Worcester Retirement Board may exercise its discretion to invest funds of the Worcester Retirement System (the "System") in Newstone Capital Partners, L.P. (the "Fund"), as contemplated by 840 CMR 19.00 et seq., and while the funds of the System are invested in Partnership Interests (as defined in the Fund's Amended and Restated Limited Partnership Agreement) of the Fund, for purposes of applying the rules set forth in 840 CMR 16.00 et seq., 17.00 et seq. and 19.00 et seq., investments of the System shall not be deemed to include any of the underlying assets of the Fund, but shall only include the Partnership Interests of the Fund, and the Fund shall not be deemed to be an investment manager or fiduciary to the System; provided that the Fund's general partner shall use its reasonable best efforts at all times to conduct the affairs of the Fund such that the assets of the Fund would not constitute plan assets of any ERISA partner subject to Title I of ERISA Section 4975 of the Internal Revenue Code of 1986, as amended, pursuant to the United States Department of Labor at Section 2510.3-101 of Part 2510 of Chapter XXV, Title 29 of the Code of Federal Regulations.

March 13, 2007

Regulation Number 17.03: Notwithstanding the provisions of the Public Employee Retirement Administration Commission's investment regulations, the Worcester Retirement Board may exercise its discretion to invest funds of the Worcester Retirement System (the "System") in Harvest Partners V, L.P. (the "Fund"), as contemplated by 840 CMR 19.01(6), and while the funds of the System are invested in shares of the Fund, for purposes of applying the rules set forth in 840 CMR 16.00 et seq. and 17.00 et seq., investments of the System shall not be deemed to include any of the underlying assets of the Fund, but shall only include the shares of the Fund, and the Fund shall not be deemed to be an investment manager or fiduciary to the System; provided that the General Partner shall use its reasonable best efforts at all times to conduct the affairs of the Partnership such that the assets of the Partnership would not constitute plan assets of any ERISA partner subject to Title I of ERISA or Section 4975 of the Internal Revenue Code of 1986, as amended, pursuant to the United States Department of Labor at Section 2510.3-101 of Part 2510 of Chapter XXV, Title 29 of the Code of Federal Regulations.

SUPPLEMENTARY INVESTMENT REGULATIONS (Continued)

February 21, 2007

Regulation Number 16.08: In accordance with Investment Guideline 99-3, the Worcester Retirement Board is authorized to invest in Boston Millennia Partners III. The Board has been a satisfied investor in BMP's predecessor partnership as well as in a previous venture partnership managed by this team while at a different firm. The management team remains intact and, after conducting due diligence on the firm, the board and its consultant are confident in BMP's capabilities.

February 15, 2007

Regulation Number 17.03: Notwithstanding the provisions of the Public Employee Retirement Administration Commission regulations, the Worcester Retirement Board may invest funds of the Retirement System (the "System") in the fund known as the INVESCO Non-US Partnership Fund II, LP (the "Fund"), and effective as of the date of the initial investment by the System of any of its assets in the Fund, while the assets of the System are so invested, the activities and investments of the Fund, directly or indirectly, shall be deemed to satisfy the prohibited transaction rules set forth in 840 CMR 16.00 et seq. and 840 CMR 17.03 to the extent such activities satisfy the prohibited transaction rules set forth in Section 406 of the U.S. Employee Retirement Income Security Act of 1974, as amended ("ERISA"), taking into account statutory exemptions under ERISA, and Prohibited Transaction Class Exemption 84-14, as amended, and other available class exemptions.

Notwithstanding the provisions of the Public Employee Retirement Administration Commission regulations, the Worcester Retirement Board may invest funds of the Retirement System (the "System") in the fund known as the INVESCO US Buyouts Partnership Fund II, LP (the "Fund"), and effective as of the date of the initial investment by the System of any of its assets in the Fund, while the assets of the System are so invested, the activities and investments of the Fund, and the underlying funds in which the Fund may invest, directly or indirectly, shall be deemed to satisfy the prohibited transaction rules set forth in 840 CMR 16.00 et seq. and 840 CMR 17.03 to the extent such activities satisfy the prohibited transaction rules set forth in Section 406 of the U.S. Employee Retirement Income Security Act of 1974, as amended ("ERISA"), taking into account statutory exemptions under ERISA, and Prohibited Transaction Class Exemption 84-14, as amended, and other available class exemptions.

February 14, 2007

Regulation Number 17.03: Notwithstanding the provisions of the Public Employee Retirement Administration Commission regulations, the Worcester Retirement Board may invest funds of the Retirement System (the "System") in the fund known as the INVESCO U.S. Venture Partnership Fund II, LP (the "Fund"), and effective as of the date of the initial investment by the System of any of its assets in the Fund, while the assets of the System are so invested, the activities and investments of the Fund, and the underlying funds in which the Fund may invest, directly or indirectly, shall be deemed to satisfy the prohibited transaction rules set forth in 840 CMR 16.00 et seq. and 840 CMR 17.03 to the extent such activities satisfy the prohibited transaction rules set forth in Section 406 of the U.S. Employee Retirement Income Security Act of 1974, as amended ("ERISA"), taking into account statutory exemptions under ERISA, and Prohibited Transaction Class Exemption 84-14, as amended, and other available class exemptions.

SUPPLEMENTARY INVESTMENT REGULATIONS (Continued)

February 13, 2007

Notwithstanding the provisions of the Public Employee Retirement Administration Commission regulations, the Worcester Retirement Board may invest funds of the Retirement System (the “System”) in the fund known as INVESCO Core Real Estate USA, LLC (the “Fund”), and effective as of the date of the initial investment by the System of any of its assets in the Fund, while the assets of the System are so invested, the assets of the System shall be deemed to include, for purposes of applying the rules set forth in 840 CMR 16.00 et seq. and 17.00 et seq., the System’s interest in the Fund but not any of the underlying assets of the Fund; provided that, at all times, the Fund qualified as a “venture capital operating company” within the meaning of the Employee Retirement Income Security Act of 1974, as amended, and the regulations promulgated thereunder.

December 4, 2006

Regulation Number 16.08: In accordance with Investment Guideline 99-3, the Worcester Retirement Board is authorized to invest in the Riverside Capital Europe Fund III. The Board has been a satisfied investor in two of Riverside’s preceding domestic buyout funds, both of which have produced impressive returns to date. The new fund focuses on European rather than domestic investments but the Board and its consultant have decided that this investment is appropriate because of:

1. the strong results from the two domestic buyout funds that the Board has invested in
2. the impressive performance of Riverside’s previous European buyout fund,
3. the basic investment process and strategy is the same, and
4. most importantly, the same management team that has overseen the domestic operations also oversees the European operations.

In accordance with Investment Guideline 99-3, the Worcester Retirement Board is authorized to invest in the Standard Life European Strategic Partners Fund 2006. The Board has been a satisfied investor in Standard Life’s first ESP Fund (2000) and the basic strategy as well as the management team are essentially the same. The manager has submitted the required updated regulatory documents.

June 26, 2006

Regulation Number 16.08: In accordance with Investment Guideline 99-2, the Worcester Retirement Board is authorized to transfer its assets from TBC’s International ACWI (All Countries World Index) Fund to TBC’s EAFE Value Fund. The two funds are managed by the same portfolio management team and in a similar style, with the difference being that the ACWI Fund includes a small allocation to emerging market equities. Since the Board recently hired a separate manager dedicated to emerging market equities, the Board is making this change in order to avoid any overlap between the two managers. By slightly limiting its investment universe, the Boston Company will focus on international developed market equities while the newly hired manager will be responsible for emerging market equities.

SUPPLEMENTARY INVESTMENT REGULATIONS (Continued)

May 15, 2006

Regulation Number 16.05: Notwithstanding the provisions of 840 CMR 16.00 et seq., the Worcester Retirement Board may be permitted to invest funds of the Worcester Retirement System in the funds known as Aetos Capital Multi-Strategy Arbitrage Cayman Fund, Aetos Capital Distressed Investment Strategies Cayman Fund, Aetos Capital Long/Short Strategies Cayman Fund and/or Aetos Capital Market Neutral Strategies Cayman Fund (collectively “Aetos Funds”) noting that as a so-called hedge fund of funds, the Aetos Funds do not trade securities, and therefore do not pay brokerage commissions or use soft dollars; and, the Aetos Funds do not vote proxies or participate in tender offers, because said Funds do not own individual securities.

Regulation Number 16.00, 17.00, 18.00, 19.00 and 21.00: Notwithstanding the provisions of 840 CMR 16.00 et seq., the Worcester Retirement Board may be permitted to invest funds of the Worcester Retirement System in BPIF Non-Taxable L.P., a Delaware limited partnership (the “Fund”), noting that as a so-called hedge fund of funds, the Fund invests in other funds, and while Blackstone Alternative Asset Management L.P., the Fund’s general partner (“General Partner”) can comply with the provisions of 840 CMR 16.00 et seq. with respect to the Fund’s direct investments, it cannot make such representations regarding any indirect investments, or the investments of the funds which it does not directly manage.

December 12, 2005

Regulation Number 16.08: In accordance with Investment Guideline 99-3, the Worcester Retirement Board is authorized to invest in Northstar Mezzanine Partners IV. The system has been a satisfied investor in Northstar Mezzanine Partners III, the immediate predecessor fund, and has submitted updated Disclosure Statement and Exemption Application forms.

October 19, 2005

Regulation Number 19.01(8): The Worcester Retirement Board is authorized to increase the Board’s maximum allocation to alternative investments (venture capital, private equity, et. al.) from the current regulatory maximum of 5% of total portfolio assets at the time of investment to 10%. The Board’s current allocation is about 4% and it is unlikely that the allocation will rise as high as 10%. Nevertheless, because of the special challenges involved in investing in this asset class, the Board would like the flexibility to exceed the existing 5% limit. The Board has had experience investing in alternative investments since 1992.

June 24, 2005

Regulation Number 16.08: In accordance with PERAC Investment Guideline 99-2, the Worcester Retirement Board is authorized to modify its large cap equity mandate with State Street Global Advisors by transferring assets from the S&P 500 Index Fund to the Russell 1000 Value and Russell 1000 Growth index funds. Together, the two Russell 1000 funds cover the same large cap universe as the S&P 500, but the separation into the two style-specific funds will offer the board greater flexibility to control risk, and to take advantage of opportunities, relative to its growth/value allocation.

SUPPLEMENTARY INVESTMENT REGULATIONS (Continued)

May 6, 2005

Regulation Number 19.01(6): Notwithstanding the provisions of Public Employee Retirement Administration Commission regulations, including 840 CMR 21.01(6), the City of Worcester Retirement Board may exercise its investment discretion to invest funds of the City of Worcester Retirement System (the “System”) in the shares of a real estate investment trust known as Hancock Timberland VII Inc. (the “Fund”), as contemplated by 840 CMR 19.01(6), and while funds of the System are invested in shares of the Fund, for purposes of applying the rules set forth in 840 CMR 16.00 et seq. and 17.00 et seq., investments of the System shall not be deemed to include any of the underlying assets of the Fund, but shall only include the shares of the Fund, and the Fund shall not be deemed to be an investment manager or fiduciary to the System; provided that at all times the Fund qualifies as a “real estate operating company” within the meaning of the Employee Retirement Security Act of 1974, as amended (“ERISA”) and the regulations promulgated there under, or the assets of the Fund are otherwise not treated as “plan assets” of the System.

May 2, 2005

Regulation Number 16.08: In accordance with PERAC Investment Guideline 99-3, the Worcester Retirement Board is authorized to invest in Charlesbank Equity Fund VI. The Board has been a satisfied investor in the predecessor fund, Charlesbank Equity Fund V.

January 31, 2005

Regulation Number 16.08: In accordance with Investment Guideline 99-2, the Worcester Retirement Board is authorized to make a modest modification to its large cap equity index mandate with State Street Global Advisors. Standard & Poor’s has announced that it will be adopting a free-float methodology for all their U.S. equity indexes, with final implementation scheduled for September 2005. In order to help address concerns over the possible market impact of this rebalancing, S&P has created provisional indexes. In hopes of avoiding whatever market impacts might be caused by the full transformation later this year, the Worcester Retirement Board has decided to switch from SSGA’s S&P 500 Index Fund to the SSGA S&P 500 Flagship Securities Lending Provisional Fund.

February 25, 2004

Regulation Number 19.01(6): Notwithstanding the provisions of Public Employee Retirement Administration Commission regulations, the City of Worcester Retirement Board may invest funds of the City of Worcester Retirement System (the “System”) with a real estate investment fund, as contemplated by 840 CMR 19.01(4)-(6), known as Heitman Value Partners, L.P. (“the Fund”), and while the funds of the System are so invested the assets of the System shall be deemed to include, for purposes of applying the rules set forth in 840 CMR 16.00 et seq. and 17.00 et seq.; the System’s interest in the Fund but not any of the underlying assets of the Fund; provided that, at all times, the Fund qualifies as a “real estate operating company” or “venture capital operating company” within the meaning of the Employee Retirement Income Security Act of 1974, as amended (“ERISA”), and the regulations promulgated thereunder, or the assets of the Fund otherwise would not be treated as subject to ERISA.

SUPPLEMENTARY INVESTMENT REGULATIONS (Continued)

October 27, 2003

Regulation Number 16.08: In accordance with PERAC Investment Guideline 99-3, the Worcester Retirement Board may invest in the Ascent Venture Partners IV Fund. The board has been an investor in Ascent's two predecessor funds and the investment results from those two partnerships have been satisfactory to date.

October 20, 2003

Regulation Number 16.08: In accordance with PERAC Investment Guideline 99-3, the Worcester Retirement Board is authorized to invest in the Riverside Capital Appreciation Fund 2003. This is the immediate successor fund to the Riverside Capital Appreciation Fund 2000, in which the Board invested in 2001. The earlier fund has had strong performance to date and the new fund is to be managed by the same investment team and with the same investment objectives.

September 22, 2003

Regulation Number 16.08: Under the terms of Investment Guideline 99-2, the Worcester Retirement System is authorized to make a minor modification to its investment-grade fixed income mandate with Opus Investment Management. Under this change, Opus will create a separate account for Treasury Inflation-Protected Securities (TIPS), a segment of the market included in the universe the firm currently manages. Since the United States has issued only ten offerings of TIPS bonds and the account will not require active management, Opus will manage this account for a fee of only 0.10% which is lower than the fee for the system's existing core bond account.

The Worcester Retirement Board is authorized to make a modest modification to its high-yield investment mandate with Loomis Sayles. This modification involves no change in the overall investment objective or in the account's benchmark. Under this modification, Loomis Sayles is authorized to invest in senior loans ("bank loans") up to 20% of the market value of the account. These are loans that are made by banks to the same universe of companies that comprises the high yield market. Because these loans are typically senior in the capital structure as well as secured by collateral, they typically have better default recovery rates and superior risk-adjusted performance than conventional high-yield bonds. Also, since these loans are adjustable-rate in nature, they have very little volatility from interest-rate changes. Thus, it is expected that the inclusion of senior loans will help to preserve principal and reduce volatility in the high-yield portfolio.

August 14, 2001

Regulation Number 16.08: In accordance with Investment Guideline 99-2, the Worcester Retirement Board is authorized to modify its fixed income management mandate with Loomis Sayles. The existing mandate calls for Loomis to invest in "high yield" corporate bonds and lower-investment-grade corporate bonds in approximately equal amounts. In order to simplify the board's portfolio structure, the lower-investment-grade portion of the account will be eliminated and Loomis will concentrate on high-yield bonds. The board has had a satisfactory relationship with Loomis Sayles for over five years and the firm is recognized within the industry as a leading manager of high-yield bonds.

SUPPLEMENTARY INVESTMENT REGULATIONS (Continued)

June 13, 2001

Regulation Number 16.08: In accordance with PERAC Investment Guideline 99-2, the Worcester Retirement Board may modify its international equity mandate with The Boston Company. The Board currently invests in TBC's International Equity Pooled Fund and TBC makes small tactical allocations to emerging markets through its Emerging Markets Pooled Fund. TBC has created a single commingled fund, the Pooled Employees International ACWI (ex U.S.) Equity Fund by which to accomplish the same investment strategy in a more efficient manner. The Board will incur no cost or change in fees by making this modification.

October 19, 2000

Regulation Number 16.08: The Worcester Retirement System may invest in the Standard Life European Strategic Partners Fund. This is an alternative investments "fund-of-funds" in which, according to an agreement between the Board and Standard Life, decisions as to the actual selection of investment partnerships will be made by Standard Life in a process not overseen by the Board. The Board will periodically monitor the selection process used by Standard Life.

April 6, 2000

Regulation Number 16.08: In accordance with PERAC Investment Guideline 99-2, the Worcester Retirement Board may re-allocate 50% of the assets currently invested in the SSGA S&P 500 Flagship Fund into the SSGA Equal Weighted S&P 500 Fund. Under this modification, the Board will be invested in the same universe of stocks but will reduce its exposure to large capitalization growth stocks and increase its exposure to the smaller stocks within the S&P 500 Index. The board believes this modification will decrease its exposure to stocks that may be over-valued and increase its exposure to stocks that may represent better value.

March 20, 2000

Regulation Number 16.08: In accordance with PERAC Investment Guideline 99-3, the Worcester Retirement System may invest in Boston Millennia Partners II, L.P. The System has not been invested in Boston Millennia Partners (BMP) I but information provided by the System, by the System's Investment Consultant, and by the manager indicates that BMP II can be reasonably considered a successor fund to one of the System's existing funds, Boston Capital Ventures (BCV) III. The general partners and other key managers of BMP are essentially the same team that managed BCV III. These men, led by Managing General Partner Dana Callow, Jr., created BMP in 1997, working initially in the same office space, and still maintain management responsibility for the investments in BVC III. Also, the investment objective of BMP II is the same as for BCV III.

NOTES TO FINANCIAL STATEMENTS

NOTE 1 – SUMMARY OF PLAN PROVISIONS

The plan is a contributory defined benefit plan covering all Worcester Retirement System member unit employees deemed eligible by the retirement board, with the exception of school department employees who serve in a teaching capacity. The Teachers' Retirement Board administers the pensions of such school employees.

ADMINISTRATION

There are 104 contributory retirement systems for public employees in Massachusetts. Each system is governed by a retirement board and all boards, although operating independently, are governed by Chapter 32 of the Massachusetts General Laws. This law in general provides uniform benefits, uniform contribution requirements and a uniform accounting and funds structure for all systems.

PARTICIPATION

Participation is mandatory for all full-time employees. Eligibility with respect to part-time, provisional, temporary, seasonal or intermittent employment is governed by regulations promulgated by the retirement board, and approved by PERAC. Membership is optional for certain elected officials.

There are 4 classes of membership in the retirement system, but one of these classes, Group 3, is made up exclusively of the State Police. The other 3 classes are as follows:

Group 1:

General employees, including clerical, administrative, technical and all other employees not otherwise classified.

Group 2:

Certain specified hazardous duty positions.

Group 4:

Police officers, firefighters, and other specified hazardous positions.

NOTES TO FINANCIAL STATEMENTS (Continued)

MEMBER CONTRIBUTIONS

Member contributions vary depending on the most recent date of membership:

Prior to 1975:	5% of regular compensation
1975 - 1983:	7% of regular compensation
1984 to 6/30/96:	8% of regular compensation
7/1/96 to present:	9% of regular compensation
1979 to present:	an additional 2% of regular compensation in excess of \$30,000.

In addition, members of Group 1 who join the system on or after April 2, 2012 will have their withholding rate reduced to 6% after achieving 30 years of creditable service.

RATE OF INTEREST

Interest on regular deductions made after January 1, 1984 is a rate established by PERAC in consultation with the Commissioner of Banks. The rate is obtained from the average rates paid on individual savings accounts by a representative sample of at least 10 financial institutions.

RETIREMENT AGE

The mandatory retirement age for some Group 2 and Group 4 employees is age 65. Most Group 2 and Group 4 members may remain in service after reaching age 65. Group 4 members who are employed in certain public safety positions are required to retire at age 65. There is no mandatory retirement age for employees in Group 1.

SUPERANNUATION RETIREMENT

A person who became a member before April 2, 2012 is eligible for a superannuation retirement allowance (service retirement) upon meeting the following conditions:

- completion of 20 years of service, or
- attainment of age 55 if hired prior to 1978, or if classified in Group 4, or
- attainment of age 55 with 10 years of service, if hired after 1978, and if classified in Group 1 or 2.

A person who became a member on or after April 2, 2012 is eligible for a superannuation retirement allowance (service retirement) upon meeting the following conditions:

- attainment of age 60 with 10 years of service if classified in Group 1, or
- attainment of age 55 with 10 years of service if classified in Group 2, or
- attainment of age 55 if classified in Group 4.

NOTES TO FINANCIAL STATEMENTS (Continued)

AMOUNT OF BENEFIT

A member's annual allowance is determined by multiplying average salary by a benefit rate related to the member's age and job classification at retirement, and the resulting product by his creditable service. The amount determined by the benefit formula cannot exceed 80% of the member's highest three year (or five year as discussed below) average salary. For veterans as defined in G.L. c. 32, s. 1, there is an additional benefit of \$15 per year for each year of creditable service, up to a maximum of \$300.

For employees who become members after January 1, 2011, regular compensation is limited to 64% of the federal limit found in 26 U.S.C. 401(a)(17). In addition, regular compensation will be limited to prohibit "spiking" of a member's salary to increase the retirement benefit.

- For persons who became members prior to April 2, 2012, Average Salary is the average annual rate of regular compensation received during the 3 consecutive years that produce the highest average, or, if greater, during the last 3 years (whether or not consecutive) preceding retirement.
- For persons who became members on or after April 2, 2012, Average Salary is the average annual rate of regular compensation received during the 5 consecutive years that produce the highest average, or, if greater, during the last 5 years (whether or not consecutive) preceding retirement.
- The Benefit Rate varies with the member's retirement age. For persons who became members prior to April 2, 2012 the highest rate of 2.5% applies to Group 1 employees who retire at or after age 65, Group 2 employees who retire at or after age 60, and to Group 4 employees who retire at or after age 55. A .1% reduction is applied for each year of age under the maximum age for the member's group. For Group 2 employees who terminate from service under age 55, the benefit rate for a Group 1 employee shall be used.
- For persons who became members on or after April 2, 2012 and retire with less than 30 years of creditable service, the highest rate of 2.5% applies to Group 1 employees who retire at or after age 67, Group 2 employees who retire at or after age 62, and to Group 4 employees who retire at or after age 57. A .15% reduction is applied for each year of age under the maximum age for the member's group.
- For persons who became members on or after April 2, 2012 and retire with more than 30 years of creditable service, the highest rate of 2.5% applies to Group 1 employees who retire at or after age 67, Group 2 employees who retire at or after age 62, and to Group 4 employees who retire at or after age 57. A .125% reduction is applied for each year of age under the maximum age for the member's group.

DEFERRED VESTED BENEFIT

A participant who has attained the requisite years of creditable service can elect to defer his or her retirement until a later date. Certain public safety employees cannot defer beyond age 65. All participants must begin to receive a retirement allowance or withdraw their accumulated deductions no later than April 15 of the calendar year following the year they reach age 70½.

NOTES TO FINANCIAL STATEMENTS (Continued)

WITHDRAWAL OF CONTRIBUTIONS

Member contributions may be withdrawn upon termination of employment. The interest rate for employees who first become members on or after January 1, 1984 who voluntarily withdraw their contributions with less than 10 years of service will be 3%. Interest payable on all other withdrawals will be set at regular interest.

DISABILITY RETIREMENT

The Massachusetts Retirement Plan provides 2 types of disability retirement benefits:

ORDINARY DISABILITY

Eligibility: Non-veterans who become totally and permanently disabled by reason of a non-job related condition with at least 10 years of creditable service (or 15 years creditable service in systems in which the local option contained in G.L. c. 32, s. 6(1) has not been adopted).

Veterans with ten years of creditable service who become totally and permanently disabled by reason of a non-job related condition prior to reaching “maximum age”. “Maximum age” applies only to those employees classified in Group 4 who are subject to mandatory retirement.

Retirement Allowance: For persons who became members prior to April 2, 2012, the benefit is equal to the accrued superannuation retirement benefit as if the member was age 55. If the member is a veteran, the benefit is 50% of the member’s final rate of salary during the preceding 12 months, plus an annuity based upon accumulated member contributions plus credited interest. If the member is over age 55, he or she will receive not less than the superannuation allowance to which he or she is entitled.

For persons in Group 1 who became members on or after April 2, 2012, the benefit is equal to the accrued superannuation retirement benefit as if the member was age 60. If the member is a veteran, the benefit is 50% of the member’s final rate of salary during the preceding 12 months, plus an annuity based upon accumulated member contributions plus credited interest. If the member is over age 60, he or she will receive not less than the superannuation allowance to which he or she would have been entitled had they retired for superannuation.

For persons in Group 2 and Group 4 who became members on or after April 2, 2012, the benefit is equal to the accrued superannuation retirement benefit as if the member was age 55. If the member is a veteran, the benefit is 50% of the member’s final rate of salary during the preceding 12 months, plus an annuity based upon accumulated member contributions plus credited interest. If the member is over age 55, he or she will receive not less than the superannuation allowance to which he or she would have been entitled had they retired for superannuation.

NOTES TO FINANCIAL STATEMENTS (Continued)

ACCIDENTAL DISABILITY

Eligibility: Applies to members who become permanently and totally unable to perform the essential duties of the position as a result of a personal injury sustained or hazard undergone while in the performance of duties. There are no minimum age or service requirements.

Retirement Allowance: 72% of salary plus an annuity based on accumulated member contributions, with interest. This amount is not to exceed 100% of pay. For those who became members in service after January 1, 1988 or who have not been members in service continually since that date, the amount is limited to 75% of pay. There is an additional pension of \$821.52 per year (or \$312.00 per year in systems in which the local option contained in G.L. c. 32, s. 7(2)(a)(iii) has not been adopted), per child who is under 18 at the time of the member's retirement, with no age limitation if the child is mentally or physically incapacitated from earning. The additional pension may continue up to age 22 for any child who is a full time student at an accredited educational institution. For systems that have adopted Chapter 157 of the Acts of 2005, veterans as defined in G.L. c. 32, s. 1 receive an additional benefit of \$15 per year for each year of creditable service, up to a maximum of \$300.

ACCIDENTAL DEATH

Eligibility: Applies to members who die as a result of a work-related injury or if the member was retired for accidental disability and the death was the natural and proximate result of the injury or hazard undergone on account of which such member was retired.

Allowance: An immediate payment to a named beneficiary equal to the accumulated deductions at the time of death, plus a pension equal to 72% of current salary and payable to the surviving spouse, dependent children or the dependent parent, plus a supplement of \$821.52 per year, per child (or \$312.00 per year in systems in which the local option contained in G.L. c. 32, s. 9(2)(d)(ii) has not been adopted), payable to the spouse or legal guardian until all dependent children reach age 18 or 22 if a full time student, unless mentally or physically incapacitated.

The surviving spouse of a member of a police or fire department or any corrections officer who, under specific and limited circumstances detailed in the statute, suffers an accident and is killed or sustains injuries while in the performance of his duties that results in his death, may receive a pension equal to the maximum salary for the position held by the member upon his death. In addition, an eligible family member may receive a one-time payment of \$150,000.00 from the State Retirement Board. This lump sum payment is also available to the family of a public prosecutor in certain, limited circumstances.

NOTES TO FINANCIAL STATEMENTS (Continued)

DEATH AFTER ACCIDENTAL DISABILITY RETIREMENT

Effective November 7, 1996, Accidental Disability retirees were allowed to select Option C at retirement and provide a benefit for an eligible survivor. For Accidental Disability retirees prior to November 7, 1996, who could not select Option C, if the member's death is from a cause unrelated to the condition for which the member received accidental disability benefits, a surviving spouse will receive an annual allowance of \$6,000. For Systems that accept the provisions of Section 28 of Chapter 131 of the Acts of 2010, the amount of this benefit is \$9,000. For Systems that accept the provisions of Section 63 of Chapter 139 of the Acts of 2012, the amount of this benefit is \$12,000.

DEATH IN ACTIVE SERVICE

Allowance: An immediate allowance equal to that which would have been payable had the member retired and selected Option C on the day before his or her death. For a member who became a member prior to April 2, 2012 whose death occurred prior to the member's superannuation retirement age, the age 55 benefit rate is used. For a member classified in Group 1 who became a member on or after April 2, 2012 whose death occurred prior to the member's superannuation retirement age, the age 60 benefit rate is used. If the member died after age 60, the actual age is used. For a member classified in Group 2 or Group 4, whose death occurred prior to the member's minimum superannuation retirement age, the benefit shall be calculated using an age 55 age factor. The minimum annual allowance payable to the surviving spouse of a member in service who dies with at least two years of creditable service is \$3,000 unless the retirement system has accepted the local option increasing this minimum annual allowance to \$6,000, provided that the member and the spouse were married for at least one year and living together on the member's date of death.

The surviving spouse of such a member in service receives an additional allowance equal to the sum of \$1,440 per year for the first child and \$1,080 per year for each additional child until all dependent children reach age 18 or 22 if a full time student, unless mentally or physically incapacitated.

COST OF LIVING

If a system has accepted Chapter 17 of the Acts of 1997, and the Retirement Board votes to pay a cost of living increase (COLA) for that year, the percentage is determined based on the increase in the Consumer Price Index used for indexing Social Security benefits, but cannot exceed 3.0%. Section 51 of Chapter 127 of the Acts of 1999, if accepted, allows boards to grant COLA increases greater than that determined by CPI but not to exceed 3.0%. Only a certain portion of a retiree's total allowance is subject to a COLA. The total COLA for periods from 1981 through 1996 is paid for by the Commonwealth of Massachusetts.

Under the provisions of Chapter 32, Section 103(j) inserted by Section 19 of Chapter 188 of the Acts of 2010, systems may increase the maximum base on which the COLA is calculated in multiples of \$1,000. For many years the COLA base was calculated based upon the first \$12,000 of a retiree's allowance. Now the maximum base upon which the COLA is calculated varies from system to system. Each increase in the base must be accepted by a majority vote of the Retirement Board and approved by the legislative body.

NOTES TO FINANCIAL STATEMENTS (Continued)

METHODS OF PAYMENT

A member may elect to receive his or her retirement allowance in one of 3 forms of payment.

Option A: Total annual allowance, payable in monthly installments, commencing at retirement and terminating at the member's death.

Option B: A reduced annual allowance, payable in monthly installments, commencing at retirement and terminating at the death of the member, provided, however, that if the total amount of the annuity portion received by the member is less than the amount of his or her accumulated deductions, including interest, the difference or balance of his accumulated deductions will be paid in a lump sum to the retiree's beneficiary or beneficiaries of choice.

Option C: A reduced annual allowance, payable in monthly installments, commencing at retirement. At the death of the retired employee, 2/3 of the allowance is payable to the member's designated beneficiary (who may be the spouse, or former spouse who is has not remarried, child, parent, sister, or brother of the employee) for the life of the beneficiary. For members who retired on or after January 12, 1988, if the beneficiary pre-deceases the retiree, the benefit payable increases (or "pops up" to Option A) based on the factor used to determine the Option C benefit at retirement. For members who retired prior to January 12, 1988, if the System has accepted Section 288 of Chapter 194 of the Acts of 1998 and the beneficiary pre-deceases the retiree, the benefit payable "pops up" to Option A in the same fashion. The Option C became available to accidental disability retirees on November 7, 1996.

ALLOCATION OF PENSION COSTS

If a member's total creditable service was partly earned by employment in more than one retirement system, the cost of the "pension portion" is allocated between the different systems pro rata based on the member's service within each retirement system. In certain circumstances, if a member received regular compensation concurrently from two or more systems on or after January 1, 2010, and was not vested in both systems as of January 1, 2010, such a pro-rata may not be undertaken. This is because such a person may receive a separate retirement allowance from each system.

NOTES TO FINANCIAL STATEMENTS (Continued)

NOTE 2 - SIGNIFICANT ACCOUNTING POLICIES

The accounting records of the System are maintained on a calendar year basis in accordance with the standards and procedures established by the Public Employee Retirement Administration Commission.

Cash accounts are considered to be funds on deposit with banks and are available upon demand.

Short Term Investments are highly liquid investments that will mature within twelve months from the date of acquisition.

Investments are reported at their fair value. Securities traded on recognized exchanges are valued at the most recent sales price at year end. If no sale was reported, the mean of the bid and asked price is used when available, or the most recent bid price. Mutual, commingled and pooled funds are valued based on the net asset or unit value at year end. Real estate and alternative investments are valued based on estimates provided by the managers of those respective investments. Purchases and sales of securities are reflected on the date the trade is initiated. Realized gain or loss is largely based on the difference between the cost or the value at the prior year end and the funds realized upon liquidation. Dividend income is generally recorded when received. Interest income is recorded as earned on an accrual basis. Income from alternative investments is recorded as reported by the managing partner. Appreciation or depreciation in the value of investments consists of the unrealized gains and losses reported as the difference between the previous period and the current value.

The system makes estimates and assumptions that affect the reported values of assets and liabilities and the reported amounts added and deducted during the reporting periods. The fair value of real estate and alternative investment holdings are generally estimated in the absence of reliable exchange values. The actual funds realized upon liquidation may differ from these estimates.

The provisions of Massachusetts General Laws Chapter 32, § 23(2) generally govern the investment practices of the system. The Board retains an investment consultant to closely monitor the implementation and performance of their investment strategy and advise them of the progress toward full funding of the system. That strategy seeks to balance the exposure to common deposit and investment risks related to custody, credit concentrations, interest rate and foreign currency fluctuations.

Operating expenses include the ordinary and necessary cost of investment and professional services and the other miscellaneous administrative expenses of the system.

NOTES TO FINANCIAL STATEMENTS (Continued)

The Annuity Savings Fund is the fund in which members' contributions are deposited. Voluntary contributions, re-deposits, and transfers to and from other systems, are also accounted for in this fund. Members' contributions to the fund earn interest at a rate determined by PERAC. Interest for some members who withdraw with less than ten years of service is transferred to the Pension Reserve Fund. Upon retirement, members' contributions and interest are transferred to the Annuity Reserve Fund. Dormant account balances must be transferred to the Pension Reserve Fund after a period of ten years of inactivity.

The Annuity Reserve Fund is the fund to which a member's account is transferred upon retirement from the Annuity Savings Fund and Special Military Service Credit Fund. The annuity portion of the retirement allowance is paid from this fund. Interest is credited monthly to this fund at the rate of 3% annually on the previous month's balance.

The Special Military Service Credit Fund contains contributions and interest for members while on a military leave for service in the Armed Forces who will receive creditable service for the period of that leave.

The Expense Fund contains amounts transferred from investment income for the purposes of administering the retirement system.

The Pension Fund contains the amounts appropriated by the governmental units as established by PERAC to pay the pension portion of each retirement allowance.

The Pension Reserve Fund contains amounts appropriated by the governmental units for the purposes of funding future retirement benefits. Any profit or loss realized on the sale or maturity of any investment or on the unrealized gain of a market valued investment as of the valuation date is credited to the Pension Reserve Fund. Additionally, any investment income in excess of the amount required to credit interest to the Annuity Savings Fund, Annuity Reserve Fund, and Special Military Service Credit Fund is credited to this Reserve account.

The Investment Income Account is credited with all income derived from interest and dividends of invested funds. At year-end the interest credited to the Annuity Savings Fund, Annuity Reserve Fund, Expense Fund, and Special Military Service Credit Fund is distributed from this account and the remaining balance is transferred to the Pension Reserve Fund.

NOTES TO FINANCIAL STATEMENTS (Continued)

NOTE 3 - SUPPLEMENTARY MEMBERSHIP REGULATIONS

The Worcester Retirement System submitted the following supplementary membership regulations, which were approved by the Public Employee Retirement Administration Commission:

Membership:

March 29, 1993:

All part-time, provisional, temporary or intermittent employees who are regularly scheduled to work twenty (20) or more hours per week are required to become members of the Worcester Retirement System and to make weekly contributions to the system pursuant to G.L. c. 32, §22 (1)(b). Those employees who are not regularly scheduled to work at least twenty (20) hours per week will not be allowed membership in the Worcester Retirement System.

Miscellaneous:

October 12, 2016:

Correction of Errors

In all cases in which a benefit calculation error occurs that results in an underpayment or non-payment of a pension or benefit to a member or beneficiary, or in the event of any overpayment as the result of an error to a member or beneficiary, the Board shall, consistent with the provisions of M.G.L. c. 32, § 20(5)(c) pay to or collect from the member or beneficiary, as the case may be, the actuarial equivalent of the benefit paid or received in error. Pursuant to the Supreme Judicial Court's decision in *Herrick v. Essex Regional Retirement Board*, 465 Mass. 801 (2013) and PERAC Memorandum #32/2013, the Board has determined that the actuarial equivalent will be determined by including an interest assessment on the amount owed based on the 10-year Treasury rate for that particular year based on the rate in effect on January 1st of each calendar year.

February 22, 1999:

Effective September 1, 1998 all retirement payments made by the Worcester Retirement System [may] be made by electronic funds transfer. This will be a direct deposit system and [may] apply to all amounts payable to Worcester Retirement System's members and beneficiaries. This provision is not mandatory for any member or beneficiary of the Worcester Retirement System. The Worcester Retirement Board will provide electric fund transfer notices to retirees when they first enroll in the program; any time there is a change in their monthly amount, and at year-end (12/31).

February 17, 1998:

Recovery of earnings in excess of limitations set forth in M.G.L. c. 32, s. 91A.

Disabled members of the Worcester Retirement System whose calendar year earnings exceed an amount which when added to the member's retirement allowance is greater than the amount of regular compensation which would have been payable to such member if such member had continued in service in the grade held by him at the time he was retired plus the sum of five thousand dollars, must refund to the Worcester Retirement System the amount of said overearnings in either a lump-sum or, in the alternative, if the member can demonstrate that a lump-sum payment would result in financial hardship, a monthly payment schedule of not more than six months, provided the member amply demonstrates financial hardship to the Board's satisfaction.

NOTES TO FINANCIAL STATEMENTS (Continued)

NOTE 4 - ADMINISTRATION OF THE SYSTEM

The System is administered by a five-person Board of Retirement consisting of the City Auditor who shall be a member ex-officio, a second member appointed by the governing authority, a third and fourth member who shall be elected by the members in or retired from the service of such system, and a fifth member appointed by the other four board members.

Ex-officio Member: Robert V. Stearns

Appointed Member: Stephen F. Wentzell Serves until a successor is appointed
Acting Chairman

Elected Member: Elizabeth A. Early Term Expires: 10/31/19

Elected Member: John F. Mahan Term Expires: 12/31/17

Appointed Member: Thomas Wade Term Expires: 01/08/18

The Board members are required to meet at least once a month. The Board must keep a record of all of its proceedings. The Board must annually submit to the appropriate authority an estimate of the expenses of administration and cost of operation of the system. The board must annually file a financial statement of condition for the system with the Executive Director of PERAC.

The investment of the system's funds is the responsibility of the Board. All retirement allowances must be approved by the Retirement Board. The PERAC Actuary performs verification prior to payment, unless the system has obtained a waiver for superannuation calculations allowing them to bypass this requirement. All expenses incurred by the System must be approved by a majority vote of the Board. Payments shall be made only upon vouchers signed by two persons designated by the Board.

Retirement board members and employees are bonded by an authorized agent representing a company licensed to do business in Massachusetts. Fidelity insurance is the only required policy coverage under Ch. 32 §21 and §23 as well as 840 CMR 17.01. The policy is designed to cover specific intentional acts such as theft, fraud or embezzlement and also specify who commits such acts, most commonly employees of the system. This coverage reimburses the system for the losses it suffers as a result of its employees' actions. It does not insure the employees for their illegal acts. Statutorily required coverage is provided by the current fidelity insurance policy to a limit of \$1,000,000 with a \$10,000 deductible issued through Travelers Casualty and Surety Company. The system also has Fiduciary coverage to a limit of \$50,000,000 under a blanket policy issued through the Massachusetts Association of Contributory Retirement Systems.

NOTES TO FINANCIAL STATEMENTS (Continued)

NOTE 5 - ACTUARIAL VALUATION AND ASSUMPTIONS

The most recent actuarial valuation of the System was prepared by Segal Consulting as of January 1, 2015.

The actuarial liability for active members was	\$525,982,485
The actuarial liability for inactive members was	14,654,757
The actuarial liability for retired members was	<u>687,917,537</u>
The total actuarial liability was	\$1,228,554,779
System assets as of that date were (actuarial value)	<u>820,708,236</u>
The unfunded actuarial liability was	<u>\$407,846,543</u>
 The ratio of system's assets to total actuarial liability was	 66.8%
As of that date the total covered employee payroll was	\$168,217,887

The normal cost for employees on that date was 9.4% of payroll

The normal cost for the employer was 6.1% of payroll

The principal actuarial assumptions used in the valuation are as follows:

Investment Return: 7.625% per annum
 Rate of Salary Increase: Varies by calendar year

SCHEDULE OF FUNDING PROGRESS AS OF JANUARY 1, 2015

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a % of Cov. Payroll ((b-a)/c)
1/1/2015	\$820,708,236	\$1,228,554,779	\$407,846,543	66.8%	\$168,217,887	242.5%
1/1/2014	\$770,334,007	\$1,170,625,635	\$400,291,628	65.8%	\$163,436,722	244.9%
1/1/2013	\$706,950,694	\$1,117,438,564	\$410,487,870	63.3%	\$166,094,906	247.1%
1/1/2012	\$712,110,360	\$1,051,190,790	\$339,080,430	67.7%	\$159,669,859	212.4%
1/1/2011	\$724,997,822	\$1,025,075,423	\$300,077,601	70.7%	\$157,720,871	190.3%

NOTES TO FINANCIAL STATEMENTS (Continued)

NOTE 6 - MEMBERSHIP EXHIBIT

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Retirement in Past Years										
Superannuation	71	65	94	66	83	156	59	113	90	101
Ordinary Disability	3	1	1	1	0	1	2	2	0	0
Accidental Disability	20	13	16	19	7	7	3	5	2	5
Total Retirements	94	79	111	86	90	164	64	120	92	106
Total Retirees, Beneficiaries and Survivors	2,977	2,890	2,884	2,792	2,781	2,809	2,772	2,754	2,741	2,718
Total Active Members	3,346	3,404	3,407	3,352	3,287	3,185	3,173	3,260	3,281	3,247
Pension Payments										
Superannuation	\$22,855,516	\$23,016,975	\$23,437,805	\$23,937,559	\$19,113,926	\$26,885,194	\$28,911,453	\$29,865,176	\$30,940,562	\$33,659,810
Survivor/Beneficiary Payments	1,965,880	2,086,434	2,098,361	2,186,684	1,922,368	1,895,837	2,260,176	\$2,219,417	\$2,357,117	\$1,326,138
Ordinary Disability	570,800	645,979	660,922	627,219	921,480	410,682	481,273	\$517,857	\$532,847	\$529,901
Accidental Disability	9,225,437	9,636,053	10,229,256	10,495,782	15,397,979	10,993,690	11,134,734	\$10,960,801	\$10,949,147	\$11,066,163
Other	13,571,542	14,390,976	13,902,964	14,084,476	16,589,290	15,422,707	15,277,356	15,859,767	16,246,803	16,773,791
Total Payments for Year	\$48,189,175	\$49,776,417	\$50,329,308	\$51,331,720	\$53,945,043	\$55,608,110	\$58,064,992	\$59,423,018	\$61,026,475	\$63,355,803

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